ISSN 2458-8865 E-ISSN 2459-1505
www.fppc.com.tr
Family Practice and Palliative Care
https://dx.doi.org/10.22391/fppc.460407

Original Article

Knowledge, attitudes, and behaviors about cervical cancer among women working in primary health care services in Van

Van ili birinci basamak sağlık hizmetlerinde çalışan kadınların serviks kanserine ilişkin bilgi tutum ve davranışlarının değerlendirilmesi

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ABSTRACT

Introduction: This study aimed to investigate the knowledge and behaviors of cervical cancer among women working in primary health care services in Van.

Methods: Among the 194 women working in primary care settings, 164 (85.4%) completed a self-administered questionnaire containing questions on demographic knowledge, cervical cancer knowledge (eight questions), attitudes related to cervical cancer (two questions), and cervical cancer-related behaviors (two questions).

Results: The mean age of the participants was 30.20±5.17 years. Of the women, 53.7% (n=88) were university graduates and 54.0% (n=88) were single. The median knowledge score of the participants was 6 (1stquartile 4; 3rdquartile 6). Of the participants, 17.8% (n=29) had regular gynecological examination, and only 19.2% (n=23) had a Pap smear test. The knowledge score of those with university degrees was higher than those with high school or lower education (Z=3.21; p=0.001), married women had higher knowledge scores compared to the single ones (Z=2.89; p=0.004), and those who had a Pap smear test had higher knowledge scores than those who did not (Z=2.85; p=0.004).

Conclusions: Although the knowledge level of primary care health care providers about cervical cancer and Pap smear was high, their practices were not in accordance with the knowledge. On the other hand, considering that the participants were health workers, better results could be expected. Primary care health professionals have a duty to transfer and implement preventive health services to society. Thus, it is regarded as useful to increase in-service training and improve the knowledge and behavior of women working in primary health care services on cervical cancer.

Keywords: Uterine cervical neoplasms, healthcare workers, papanicolaou test, primary care

ÖZ

Giriş: Bu çalışmada, Van ili birinci basamak sağlık hizmetlerinde çalışan kadınların serviks kanserine ilişkin bilgi ve davranışlarının araştırılması amaçlanmıştır.

Yöntem: Birinci basamakta çalışan 194 kadından 164'üne (%85,4) demografik bilgileri içeren soruların yanında serviks kanseri bilgisini ölçen sekiz adet, serviks kanseriyle ilgili tutum ölçen iki adet ve serviks kanseriyle ilgili davranış ölçen dört adet sorudan oluşan bir anket kendi kendine doldurma yöntemiyle uygulandı.

Bulgular: Katılımcıların yaş ortalaması 30,20±5,17 yıl idi. Kadınların %53,7'si (n=88) üniversite mezunu ve %54,0'ü (n=88) bekârdı. Katılımcıların ortanca bilgi puanı 6 (1. çeyrek 4; 3. Çeyrek 6) idi. Katılımcıların %17,8'i (n=29) düzenli jinekolojik muayene olmuş, sadece %19,2'si (n=23) Pap smear testi yaptırmıştı. Üniversite mezunu olanların bilgi puanı lise ve altı eğitimi olanlardan (Z=3,21; p=0,001), evli olanların bilgi puanı bekâr olanlardan (Z=2,89; p=0,004) ve Pap smear testi yaptıranların bilgi puanı yaptırmayanlardan (Z=2,85; p=0,004) daha yüksekti.

Sonuç: Bu araştırmada birinci basamakta sağlık hizmeti veren kadınların SKa ve Pap smear ile ilgili bilgi düzeyleri genel olarak yüksek bulunmuş olmakla birlikte, uygulamaları düşük bulunmuştur. Diğer taraftan, katılımcıların sağlık çalışanları olduğu düşünüldüğünde sonuçları daha iyi olması beklenebilirdi. Koruyucu sağlık hizmetlerini topluma aktarma ve uygulama görevi bulunan birinci basamak sağlık çalışanlarının bilgi ve davranış eksikliklerinin giderilmesi için hizmet içi eğitimlerin artırılmasının yararlı olacağı düşünülmektedir.

Anahtar kelimeler: Serviks kanseri, sağlık çalışanları, pap smear. aile hekimliği

Received	Accepted	Published Online	Corresponding Author	E-mail
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Fam Pract Palliat Care. 2019 Aug;4(2):39-45

Introduction

Cervical cancer (CCa) is the third most common malignancy in women worldwide and remains the leading cause of cancer-related deaths for women in developing countries [1]. CCa affects especially women in low socioeconomic conditions and women who cannot benefit from regular health control and treatment. Therefore, the incidence of CCa differs significantly between developed and developing countries. CCa is the second most common cancer in the developing countries, while it ranks tenth in the developed countries. Similarly, CCa is the second most common cause of cancer-related deaths among women in developing countries ranking after breast cancer, but it is not even among the first 10 causes in developed countries [1,2]. According to the 2015 data of the Cancer Department of the Ministry of Health in Turkey, the prevalence of CCa in women is 4.5 per 100,000, and it constitutes approximately 2.5 percent of all cancer cases. CCa is the 9th most common cancer among women in Turkey, following breast, thyroid, colorectal, uterine corpus, lung, ovary, stomach, and nonhodgkin lymphoma [3].

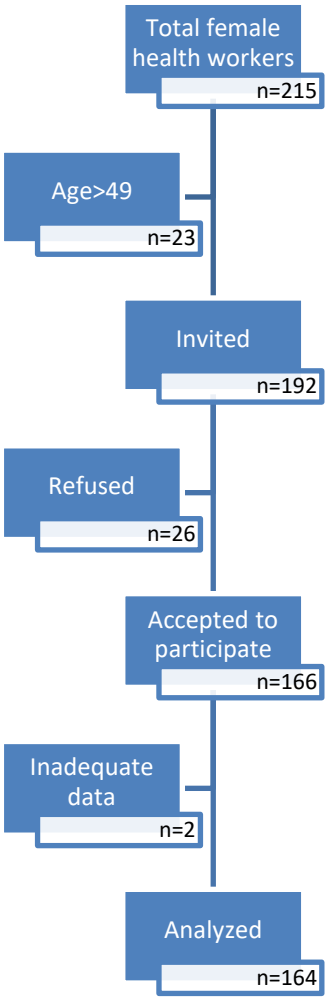
Human Papillomavirus (HPV) infection, which is known to play a role in the etiology of CCa, is the most common sexually transmitted disease in the world, especially in developing countries. The prevalence of asymptomatic infection varies between 2-44%, according to the region of research [4,5]. Early sexual intercourse, numerous sexual partners or partners with multiple partners, and other sexually transmitted diseases are the most critical risk factors for HPV infection. Additionally, age, high parity, smoking, long-term oral contraceptive use, immune suppression, and infections are other factors that increase the risk of progression to cancer [4,6-8].

Pap smear and HPV tests are used in CCa screening. Early detection is possible by Pap-smear/HPV DNA tests, which can be performed early, and necessary measures can be taken before CCa development. Therefore, women in the 30-65 age range in Turkey should be encouraged to admit to primary care facilities or hospitals to have screening tests performed [9]. Many healthy behaviors reduce the risk of CCa, but none of them is as effective as Pap smear [10]. By using the routine Pap smear screening test, invasive CCa rates decreased in developed countries over the last 50 years [11]. The nine-valent HPV (Gardasil 9) vaccine can prevent high grade squamous intraepithelial lesions by 90% [12].

Since 20-25% of women get knowledge about cancer from health workers [13], knowledge, attitudes, and behaviors of primary health care professionals are of great importance, as they are more advantageous concerning public contact. It is essential to reveal the knowledge, attitude, and behaviors of the women working in health services and to plan and implement appropriate training for health care workers according to the knowledge obtained. The aim of this study was to investigate the knowledge and behaviors, related to CCa, of the women working in primary health care services in Van.

Methods

Figure 1. Participant flowchart



This descriptive, cross-sectional study was conducted between 15.09.2017 - 01.11.2017 among the women working in primary health care facilities in Van province. The study was reported according to the STROBE guidelines [14]. Informed consent was obtained from all individual participants included in the study. After getting the permission of the Van Health Directorate for the research protocol, University Ethics Committee approval was received from the University of Health Sciences, İzmir Tepecik Training and Research Hospital (Number: 25, date: 13.07.2017).

Located in eastern Turkey, the Van province has a population of around 1,106,891 people. At the time of the study, there were 86 family health centers and 5 public health centers, and 192 women were working in these facilities. Besides offering diagnostic and treatment services, these centers provide basic preventive health services such as health education, immunization, and reproductive health.

As to the post hoc sample-size calculation, to make a comparison between knowledge scores of participants who underwent Pap smears (mean knowledge score: 6.0 ± 1.5 points) and those who did not (mean knowledge score: 5.0 ± 1.0 points), given a two-sided alpha error of 5%, an effect size of 0.8 (high), and a power of 80%, a total number of 52 participants (26 participants in each group) was required [15].

The study population consisted of 192 female health professionals working in the province of Van, aged between 18 to 49 years. The study sample included all women who agreed to participate in the study and met the criteria for sampling. Out of the 192 invited, data from 164 (85.4%) female health workers were analyzed (Figure 1).

Variables

After informing the participants in a face-to-face manner, they were asked to fill out the questionnaires. Each interview was completed in about 15 minutes. The data collection form consisted of two parts, first part containing questions about socio-demographic characteristics of health care workers, and the second part containing questions aiming to query participants' knowledge about risk factors of CCa, as well as, knowledge and attitudes about gynecological examination and the Pap smear test.

The study variables included age (year), occupation (doctor/nurse/midwife/assisting health personnel/cleaning personnel/other), educational status (high school and below/university), marital status (married/single), menopause (yes/no), and menstruation (regular/irregular). It also included 8 questions for measuring knowledge about CCa and Pap smear, and a knowledge-score was calculated. Two questions were included about attitudes and four questions about behaviors.

Bias

The participants were briefed about the research to ensure that the research data was obtained correctly, and asked not to include their identities on the data collection form. To prevent bias, the data were checked and debugged after data entry.

Quantitative variables

Eight multiple choice questions were used to calculate a knowledge score of the participants about CCa and Pap smear test, giving ratings between 0 to 8. Cronbach alpha internal consistency coefficient for the knowledge score was calculated as 0.404.

Statistical methods

The data were analyzed with the statistical package program SPSS 25.0 (SPSS Inc., Chicago, IL, USA). Data were presented as numbers, percentage mean, standard deviation, median, and quartiles. The coherence of the knowledge scores to the normal distribution within the subgroups was analyzed by the Shapiro-Wilk test. The comparison of the knowledge scores of the participants according to their education, marital status, and menstrual status was analyzed with the Mann-Whitney U test, while the contrast of the knowledge scores between the occupational groups was assessed with the Kruskal-Wallis H test, followed by the post hoc Dunn test. The Chi-Square test was used to compare categorical independent variables affecting the Pap smear test status. The statistical significance level was accepted as $p<0.05$.

Results

Participants

The mean age of the participants was 30.20±5.17 years. Of the women, 53.7% (n = 88) were university graduates and 54.0% (n = 88) were single. The sociodemographic characteristics of the participants are given in Table 1.

Table 1. Sociodemographic characteristics of the participants.

		n	%
Education	High school and below	76	46.3
	University	88	53.7
Occupation	Doctor	27	16.5
	Nurse	51	31.1
	Midwife	57	34.8
	Assistant health personnel	9	5.5
	Other	20	12.2
Marital status	Single	88	54.0
	Married	75	46.0
Menopause	No	151	100.0
	Yes	0	0.0
Menstruation	Irregular	23	17.2
	Regular	111	82.8

Descriptive data

Table 2 shows the participants' knowledge, attitudes, and behaviors related to CCa and Pap smear. The highest proportion of a correct answer was given by 94.9% (n = 130) to the question “What is the reason of performing the Pap smear test?” with “Detecting cervical cancer” as the response. The lowest correct answer was to the question asking that Pap smear should be performed every 3 years (%5.5; n=8). Of the participants, 22.3% (n = 35) had not heard of Pap smear, 17.8% (n = 29) had regular gynecological examinations, 19.2% (n = 23) had a Pap smear test, and 28.2% (n = 46) were smokers.

Table 2. Participants' knowledge, attitudes, and behaviors related to CCa and Pap smear.

			n	%
Knowledge	What is the reason for ordering the Pap smear test?	No idea	1	0.7
		Cervical cancer	**130**	**94.9**
		Infection	5	3.6
	What is the age of starting Pap smear tests?	Below 18 years	6	6.5
		18-29 years	28	30.1
		30 years and older	**28**	**30.1**
		After marriage	31	33.3
	How often should the Pap smear test be performed?	Every 6 months	32	21.5
		Every year	70	47.0
		Every 2 years	16	10.7
		Every 3 years	**8**	**5.4**
		No idea	23	15.4
	Does having more than one sexual partner increase the risk of cervical cancer?	No	18	11.0
		Yes	**145**	**89.0**
	Can a sexually transmitted microorganism (HPV) cause cervical cancer?	No	21	13.0
		Yes	**141**	**87.0**
	Does early sexual experience (<18 years) increase the risk of cervical cancer?	No	45	28.0
		Yes	**116**	**72.0**
	Does smoking increase the risk of cervical cancer?	No	26	16.0
		Yes	**136**	**84.0**
	Are there vaccines or other methods to prevent cervical cancer?	No	34	21.0
		Yes	**128**	**79.0**
Attitude	Having heard of a Pap smear test	No	35	22.3
		Yes	122	77.7
	Knowing the time to do a Pap smear test	Does not know	45	30.8
		Knows	101	69.2
Behavior	Regular gynecological examination	No	134	82.2
		Yes	29	17.8
	Frequency of gynecological examinations	Every 6 months	11	28.9
		Every year	16	42.1
		Every 2 years	1	2.6
		Every 3 years	5	13.2
		Less	5	13.2
	Having a Pap smear test done	No	97	80.8
		Yes	23	19.2
	Number of Pap smear tests done	1	14	60,9
		2	6	26.1
		3	2	8.7
		4 or more	1	4.3
	Smoking	No	117	71.8
		Yes	46	28.2

*Correct answers of knowledge questions are shown in bold.

Outcome data

The median knowledge score of the participants was 6 (1st quarter: 4; 3rd Quarter: 6). The knowledge scores of women with university degrees were higher than those with high school or lower education (Z = 3.21; p = 0.001; 0.004), and that of married participants was higher than single participants, (Z=2.89; p=0.004). The knowledge scores of those who had a Pap smear test were higher than those who had not (Z=2.85; p=0.004) (Table 3).

Table 3. Knowledge scores of the participants according to sociodemographic characteristics

		Knowledge score				
		Median	Q1	Q3	Z	*P*
Education	High school or below	5.0	4.0	6.0	3.21	0.001
	University	6.0	5.0	6.0		
Marital status	Single	5.0	3.5	6.0	2.89	0.004
	Married	6.0	5.0	6.0		
Menstruation	Irregular	6.0	5.0	6.0	1.76	0.079
	Regular	6.0	4.0	6.0		
Having Pap smear done	No	5.0	4.0	6.0	2.85	0.040
	Yes	6.0	6.0	7.0		

Q1. 1st quartile, Q3. 3rd quartile

The Kruskal-Wallis test was used to compare the knowledge scores of the participants according to their occupations. The knowledge score of at least one occupational group was significantly different than the others (Kruskal-Wallis H=40.79; p<0.001). The Post-hoc Dunn test was used for pairwise comparisons. The knowledge scores of the doctors, midwives, and nurses were higher than the other healthcare providers (p <0.05). The

knowledge score of the doctors was higher than that of the midwives, nurses and assistant healthcare staff (p <0.05). There was no statistically significant difference in the other pairwise comparisons according to the occupations (p>0.05) (Figure 2).

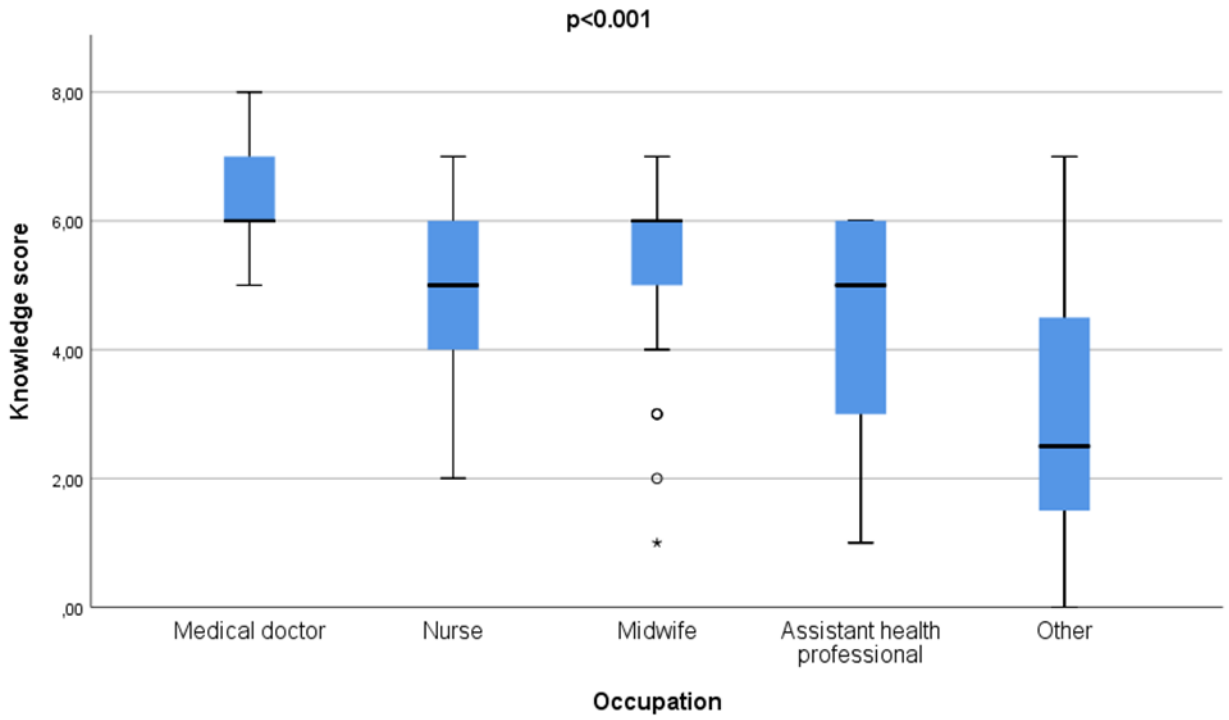


Figure 2. Comparison of knowledge scores according to the occupations

The proportion of participants who needed but did not have a Pap smear test was 71.2% (n = 42) among the 30 years or older aged participants. The rate of having a Pap smear test in married participants (37.3%; n = 22) was higher than in single participants (1.7%; n = 1) ($\chi 2 = 24.21$; p <0.001). The proportion of having a Pap smear test for university graduates (25.0%; n = 17) was higher than those with high school education or below (11.5%; n = 6), but the difference was statistically borderline significant ($\chi 2= 3.45$; p = 0.063). There was no relationship between occupational status, menstrual status, smoking, and having a Pap smear test done (p> 0.05) (Table 3).

Table 3. Pap smear test distribution of participants according to the sociodemographic characteristics

		Having Pap smear test done					
		No		Yes			
		n	%	n	%	χ^2	*p*
Education	High school or below	46	88.5	6	11.5	3.45	0.063
	University	51	75.0	17	25.0		
Marital status	Single	59	98.3	1	1.7	24.21	<0.001
	Married	37	62.7	22	37.3		
Occupation	Doctor	16	69.6	7	30.4	3.79	
	Nurse	34	85,0	6	15.0		0.420*
	Midwife	28	77.8	8	22.2		
	Assistant health personnel	7	100.0	0	0.0		
	Other	12	85.7	2	14.3		
Menstruation	Irregular	14	77.8	4	22.2	0.11	0.736
	Regular	65	81.3	15	18.8		
Smoking	No	67	81.7	15	18.3	0.18	0.670
	Yes	29	78.4	8	21.6		

* Fisher's Exact Test

Discussion

Key findings

In this study, the level of knowledge about CCa and Pap smear was relatively high among primary healthcare providers. However, the results could be expected to be better, considering that the participants are health workers. Although the participants generally knew why the Pap smear test should be performed, the interval between two tests was less known. Occupation, education, and marital status significantly affected knowledge scores. Approximately 7/10th of the participants aged 30 and over did not have a Pap smear test done. Having a Pap smear test performed was more frequent among married participants and university graduates.

In the study of Donati and colleagues, in which the knowledge, attitudes, and behaviors of young women aged between 18 and 25 in Italy were studied, 92% of the participants declared that they had heard about Pap smear, 83% about CCa, 59% about HPV infection, and 52% about HPV vaccination [16]. Again, in the same study, factors affecting the high scores of knowledge about the prevention of CCa were reported as having a high level of education and having a Pap smear. Being sexually active and being a foreigner were not significant factors. In contrast, having one or more children and not being sure about HPV vaccination were associated with low knowledge scores. In our study, the proportion of having heard of the Pap smear test was lower. However, the high level of education in our sample may have increased the knowledge scores.

The General Directorate of Public Health recommends that the Pap smear test should be performed between the ages of 30 and 65 years [9]. However, the Turkish Society of Gynecology and Oncology [17] and the American Association of Obstetrics and Gynecologists [18] suggest that screening should be performed every 3 years after the age of 21. In a study performed in Turkey, it was reported that women could not identify the candidate for a Pap smear test, and 40.8% of the participating women did not receive this test [19]. In our research, in accordance with the implementations in Turkey, participants' knowledge about that Pap smear test should be performed at the age of 30 and every 3 years was investigated, and it was found that the knowledge score was lower than expected among health care workers. At the same time, the rates of having a Pap smear test according to age were also meager.

Wellensiek and colleagues, in a study conducted in South Africa, detected that 87% of women with low socioeconomic and educational levels did not have Pap smear test because they did not know about the Pap smear test at all. The level of education has been reported to be an important factor in understanding the benefits of having a Pap smear, diagnosis of CCa, and its importance in health care [20]. Supporting this study, we have found in our study that 25% of university graduates had a Pap smear test performed, while only 11.5% of those who graduated from high school and below underwent this investigation. Failure to know the risk factors and Pap smear test leads to the underutilization ıf the prevention, early diagnosis, and treatment methods. Therefore, it is recommended that especially the midwives and nurses working in community health should receive training on CCa and Pap smear procedures. This knowledge gap should be eliminated through in-service training.

Ersin and colleagues reported in a study performed in health workers that 28.4% of the participants had a Pap smear test and 14.7% had regular gynecological examinations [21]. Can and colleagues [22] reported that half of those who knew the Pap smear test had a gynecological examination, whereas only 3% of those who did not know the Pap smear test had regular gynecological examinations. In this study, the frequency of regular gynecological examination was very low. The gynecological examination is important for the early diagnosis of some types of cancer. A gynecological examination is particularly a good opportunity to identify people at risk for cancer and to plan the necessary lifestyle changes. CCa is more common among women who do not use this opportunity [23].

Limitations

Some of the limitations of this study can be stated as follows: first, the data collection method based on self-reporting carries the limitations of survey studies. Second, the results cannot be generalized to other segments of the society, since the data are obtained only from health workers. In addition, the validity and reliability of the questions that measure knowledge, attitudes, and practices have not been previously tested and verified.

Conclusion

In accordance with the main characteristics of family medicine, preventive medicine practices are integrated with treatment and rehabilitation procedures. Family physicians and family health workers are expected to coordinate individual health care and to cooperate with other health professionals. Health care workers must transfer and implement preventive health services to society.

Cervical cytology screening, which is widely used in the world, has proven itself as a very successful method in the early diagnosis of CCa within the scope of preventive health services. In our study, the participants' knowledge levels were relatively good, but gynecological examination and having a Pap smear performed were quite low. In this context, it was concluded that it would be beneficial to increase inservice training to eliminate the knowledge and behavior deficiencies of health care workers who have the duty to transfer and implement preventive health services to society.

Conflict of interest: There is no conflict of interest in this research.

Financial disclosure: No financial support was received for this study.

References

1. Torre LA, Bray F, Siegel RL, Ferlay J, Lortet-tieulent J, Jemal A. Global Cancer Statistics, 2012. CA: Cancer J Clin 2015. https://doi.org/10.3322/caac.21262
2. Torre LA, Islami F, Siegel RL, Ward EM, Jemal A. global cancer in women: burden and trends. Cancer Epidemiol Biomarkers Prev 2017;26:444–57. https://doi.org/10.1158/1055-9965.EPI-16-0858
3. Ilter H, Keskinkilic B. [Turkey Cancer Statistics] (in Turkish) 2015. Chapter 4.1. 1st ed. Ankara: Public Health General Directorate, Ministry of Health; 2018:20. Available at https://hsgm.saglik.gov.tr/depo/birimler/kanser-db/istatistik/Turkiye_Kanser_Istatistikleri_2015.pdf Access date: 10.03.2019
4. Murphy J, Mark H. Cervical cancer screening in the era of human papillomavirus testing and vaccination. J Midwifery Womens Health 2012;57:569–76. https://doi.org/10.1111/j.1542-2011.2012.00207.x
5. Fernandes J, Carvalho M, de Fernandes T, et al. Prevalence of human papillomavirus type 58 in women with or without cervical lesions in northeast Brazil. Ann Med Health Sci Res 2013. https://www.ncbi.nlm.nih.gov/pubmed/24379999
6. Ergunay K. [Human papilloma viruses] (in Turkish) In: Us AD, Ergunay K, editors. Chapter 20: Molecular, Clinic and Diagnostic Virology, Ankara: Bilimsel Tip Publishing House; 2011:591.

7. Erickson BK, Alvarez RD, Huh WK. Human papillomavirus: What every provider should know. Am J Obstet Gynecol 2013. https://doi.org/10.1016/j.ajog.2012.09.007
8. Keen E, Aldous W. Genital infections and sexually transmitted diseases. In: Mahon, CR. Lehman, DC. Manuselis G, editor. Textb. Diagnostic Microbiol. 4th ed, Missouri: Saunders: Elsevier; 2011, p. 901–26.
9. [Cervical cancer] (in Turkish). Public Health General Directorate, Cancer Department Directorate, 2019. Available at https://hsgm.saglik.gov.tr/tr/kanser-turleri/kanser-turleri/362-kanser-dairesi-baskanligi-kanser-turleri-serviks-kanseri.html Access date: 10.03.2019.
10. Jennings-Dozier K, Lawrence D. Sociodemographic predictors of adherence to annual cervical cancer screening in minority women. Cancer Nurs 2000. https://doi.org/10.1097/00002820-200010000-00004
11. Curry SJ, Krist AH, Owens DK, et al. Screening for cervical cancer us preventive services task force recommendation statement. JAMA - J Am Med Assoc 2018. https://doi.org/10.1001/jama.2018.10897
12. Immunogenicity and Tolerability of Broad Spectrum Human Papillomavirus (HPV) Vaccine in Adult and Young Adult Women US National Library of Medicine. Clinical Trials. Available at https://clinicaltrials.gov/ct2/show/NCT03158220 Access date: 10.03.2019
13. Yildirim AD, Ozaydin AN. [Sources of breast cancer knowledge of women living in Moda/İstanbul and their attendance to breast cancer screening] (in Turkish). J Breast Health 2014; 10: 47-56 https://doi.org/10.5152/tjbh.2014.1762
14. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. PLoS Med 2007;4:1623–7. https://doi.org/10.1371/journal.pmed.0040296
15. Faul F, Erdfelder E, Lang A-G, Buchner A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods 2007;39:175–91. https://doi.org/10.3758/BF03193146
16. Donati S, Giambi C, Declich S, et al. Knowledge, attitude and practice in primary and secondary cervical cancer prevention among young adult Italian women. Vaccine 2012;30:2075–82. https://doi.org/10.1016/j.vaccine.2012.01.057
17. ACOG Practice Bulletin No 157: Cervical Cancer Screening and Prevention (in Turkish). Turk Soc Gynecol Oncol. Available at http://www.trsgo.org/1/haber/63/acog-practice-bulletin-no-157-serviks-kanserinde-tarama-ve-onleme-ceviri-ozet Access date: 11.12.2018.
18. Practice Bulletin No. 157: cervical cancer screening and prevention. Obstet Gynecol 2016;127:e1–20. https://doi.org/10.1097/AOG.0000000000001263
19. Pinar G, Topuz S, An S, Dogan N, Kaya N, Algier L. [Knowledge of women applied to obstetrics and gynecology outpatient clinics of Baskent University Ankara Hospital about HPV vaccination and cervical cancer] (in Turkish). Turk J Gynecol Oncol 2010;1:11–8.
20. Wellensiek N, Moodley M, Moodley J, Nkwanyana N. Knowledge of cervical cancer screening and use of cervical screening facilities among women from various socioeconomic backgrounds in Durban, Kwazulu Natal, South Africa. Int J Gynecol Cancer 2002. https://www.ncbi.nlm.nih.gov/pubmed/12144686
21. Ersin F, Kissal A, Polat P, Benan D, Erdogan M. Perception of female medical personnel toward cervical cancer and the affecting factors (in Turkish). J Res Dev Nurs 2016;18(2-3): 31-43 Available at: http://hemarge.org.tr/ckfinder/userfiles/files/2016/vol18num2-3/4%20(1).pdf
22. Can H, Kilic OY, Guclu YA, Ozturk F, Demir S. [Cervical cancer awareness of female health employees] (in Turkish). J Tepecik Edu Res Hosp 2010;20:77–84.
23. Tuncer ZS. [Cervical Cancer] (in Turkish). In: Gunalp S, Tuncer S, editors. Obstetrics and Gynecology Diagnosis and Treatment, Ankara: Pelikan Publishing; 2004, p. 669–82.